

09/480,193

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PATENT
ATTORNEY DOCKET IR 3556

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Shi Jun Yang

Group Art Unit 1773

Serial No.: 09/372,499

Examiner: UHLIR, Nikolas J.

Filed : 01/10/2000

For: POLYMERIC ARTICLES HAVING A TEXTURED SURFACE AND
FROSTED APPEARANCE

DECLARATION UNDER 37 CFR 1.132

Mail Stop AF
Commissioner for Patents
PO. Box 1450
Alexandria, VA 22313-1450

Sir:

Declarant, SHI-JUN YANG, hereby declares as follows:

1. That I am an inventor of the above-identified application and am familiar with the prosecution thereof, including the Examiner's conclusion in the Office Actions mailed 3/17/03 and 09/25/03 that the claimed compositions are obvious, and the Examiner's suggestion that the applicant present a comparison of the instantly claimed invention to that of the formulations by Hennig in US Patent 4,876,311.
2. That I believe my claimed discoveries are not taught or suggested by the cited art, as shown by the attached comparison data.,
3. That I conducted experiment(s) on June 30 and July 09, 2003, as recorded in my lab notebook No 12114, pages 106-108, copies of which are attached hereto; wherein polymer particles having

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59% by weight of methyl methacrylate (MMA), 40% by weight styrene (STY), and 1% by weight allyl methacrylate (ALMA) cross-linker were synthesized. 30% by weight of the MMA/STY/ALMA particles were then compounded with 70% by weight polymethylmethacrylate (PMMA) and injection molded to form a 2" x 3" x 0.125" plaque. The visual appearance of the plaque was Opaque and the Total White Light Transmission (TWLT) was 22.0 – 24.0 % as determined by a Hunterlab colorimeter using ASTM E1331 and ASTM E1163.

4. That the results of the above experiments show the formulations presented by the Hennig reference are far outside the application targets for frosted articles as claimed in the present application.

5. That all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of this application or any patent issued thereon.

Date: 12/16/2003

Signature:


Shi Jun Yang

Attachment: 3 notebook pages

Data Sheet for Suspension Process using Small Reactor

Experiment #: Frosty 0625 B

Date: 7-9-03

Harted v. S. & Co \$5⁰⁰
to Dissolve
The Day Before

Sample size: 1000 g monomer

Total sample 800

Suspending agent mixtures	DI water-g	PVA-g	Total mix-g
	2940	48	3000

DI water-g	PAMPS- α II	Total mix-g
2362	120	2400

98% 1.60% 98% 5%

Suspension Age

Spot 2 Monomer compositions

Weigh the following ingredients carefully into a bottle.

Monomer Comp

Step 3

Maintain the agitation at 120 RPM and realsee reactor temperature to 78 C

Step 4

Charge the monomer mixture into reactor according to recommended rate after thorough mixing.

Step 5

Hold reactor temperature at 75 °C for 30 minutes

Hold reactor temperature at 78C for 45 minutes 12-0

Hold reactor temperature at 78.9°C for 153 minutes.

Held reactor temperature at 82°C for 90 min

Temperature | Stirrer RPM | Particle Size

10. *What is the name of the author of the book?*

Time	Hold Time	Temperature	Stirrer RPM	Particle Size	Charge Rate	Comments
0610		Reheat Suspension mix				
0615		Weight to monomer mix				
0700	Tern Tb	70°C		Change Reactor.		
0715	Change	Complete				
0730	75°	72-20	200			
0740	0	74.9 (72.9) ↓ 160				
0750	30	74.8	160			
0820	60	74.7	1210.0 0.8mm			
0830	0	74.78	190 ↓		→ 930	Pm. 8mg 1 hr 10 min
0900	30	75.0	150			
0930	60	77.8		→	930	8 hr. → 7
1000	90	78.2	187			
1030	120	78.0	—	→	1030	3 hr → 7
1035	0	781.0	187			
1100	30	781.0	187			
1120	0	784.0	190			
1200	60	83.7	190	Cool	Temp 11	cool down

Rm. Single G.
1 m 10 mm ~~G~~ RWT
flwr. \rightarrow 78° G.
2 m \rightarrow 78° (2)
cool down (2)

Particle Size At end of Run after Cool down 80.93 mm
Particle Size After washing + Bottom Sump 18.79
50.37

Project No. 12114 Title Suspension fracture

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From Page 16

Data Sheet for Suspension Process using Small Reactor

Experiment #: Frosted 0625 A

Date: 6-30-03 Agent 3000 gm/m²
PUA Suspns. in Agent 3000 gm/m²

DIH₂O 2940 gm 10%
PVA 60 gm 2%
Suspension Agent Mixture - 1000 gm

Suspension Agent Mixture - 760

rima 590 gm Cr

ST. JOHN 900 gm

Plant 10 cm
11 18 cm

Modern names Compositions

Monomer Compositions

Particle Size

ing Small Reactor - 92.67mm
 frosted

Control - 82.56mm
 (89 mm)

After wash Control 89.87
 frosted 106.3

To Page No.

Witnesses & Undersigned by me,	Date	Invented by	Date
		<i>John W. Miller</i>	<i>7-8-03</i>
NO. B1S	P. II/128	4:02PM	DEC. 18, 2003
ATLANTIC CHEMICALS Z1S 419 5218		419 5218	

Recipe for Suspension Process using Small Reactor

Date: 6/26/2003

PAGE NO. 106 PAGE NO. 12114
PAGE 1212 * RCVD AT 12/18/2003 2:54:37 PM * Easlem Standard Time * SVR.USPTO-EFTR-1.0 * DMS:8729306 * CSID:12154195218 * DURATION (MM:SS) 03:28

frosted Suspnsn

PEQ#

sample wt.
800

Sample size: 1000 g monomer

Suspending agent mixtures			total sample	sample wt.		
DI water-g	PVA-g	Total mix-g	DI water-g	PAMPS solu	Total mix-g	sample wt.
2940	60	3000	2352	120	2400	
98%	2%		98%	5%		

Charge the above suspending agent into reactor with agitation. Remove oxygen from reactor using N2 flow

Weigh the following ingredients carefully into a bottle.

ID	Monomer compositions	MMA	EA	styrene	ALMA	DVB	DEHA	n-DDM	%Initiator
9									
9	Frost-susp0025	59.00%	0.00%	40%	1.00%	0.00%	0.00%	0.10%	0.40%
9		590	0	400	10	0	0	1	4

Step 3 Maintain the agitation at 160 RPM and raise reactor temperature to 78 C

Step 4 Charge the monomer mixture into reactor according to recommended rate after thorough mixing

- Step 5 Hold reactor temperature at 75 C for 30 Minutes *163 min*
- Hold reactor temperature at 78C for 45 minutes
- Hold reactor temperature at 78-79 C for 453 minutes *54° for 130 minutes*
- Hold reactor temperature at 82 C for 30 minutes
- Hold reactor temperature at 84C for 30 minutes
- The peak temperature may be 5-8 degree higher than the heating temperature

The exothermal starts at about 285 min. after the feed. Watch carefully the exothermal peak temperature and remove excess heat properly.

Step 6 Collecting the polymer beads by passing the mixture through a 200 mesh screen under vacuum.

Step 7 Clean the feeding line, reactor, and pump using proper solvent and water thoroughly for future use.

OK